

A P P E N D I X E

PC 99 Master Checklist

If a recommended feature is implemented, it must meet the PC 99 requirements for that feature as defined in this document.

Checklist for PC 99 Basic Requirements

Consumer	Office	Mobile	Workstation	Entertainment
<i>3.1. System performance meets PC 99 minimum requirements</i>				
300 MHz,	300 MHz,	233 MHz,	400 MHz,	300 MHz
32 MB	64 MB	32 MB	128 MB	64 MB
<i>3.2. System design meets ACPI 1.0 specification and PC 99 requirements</i>				
<i>Required for all system types, with exceptions for mobile PCs</i>				
<i>3.3. Hardware design supports OnNow and Instantly Available PC initiatives</i>				
<i>Required for all system types, with exceptions for mobile PCs</i>				
<i>3.4. BIOS meets PC 99 requirements for OnNow support</i>				
<i>Required for all system types</i>				
<i>3.5. BIOS meets PC 99 requirements for boot support</i>				
<i>Required for all systems, with exceptions for mobile PCs</i>				
<i>3.6. All expansion slots in the system are accessible for users to insert cards</i>				
<i>Required for all system types, with extra guidelines for mobile</i>				
<i>3.7. Audible noise meets PC 99 requirements</i>				
<i>Required for all system types</i>				
<i>3.8. System and component design practices follow accessibility guidelines</i>				
<i>Recommended for all system types</i>				
<i>3.9. Internal system modification capabilities are not accessible to end users</i>				
<i>Recommended for all system types</i>				
<i>3.10. System design provides physical security</i>				
<i>Recommended for all system types</i>				
<i>3.11. Each device and driver meets PC 99 device requirements</i>				
<i>Required for all system types</i>				
<i>3.12. Each bus and device meets Plug and Play specifications</i>				
<i>Required for all system types</i>				
<i>3.13. Unique Plug and Play device ID provided for each system device and add-on device</i>				
<i>Required for all system types</i>				
<i>3.14. Option ROMs meet Plug and Play requirements</i>				
<i>Required for all system types</i>				
<i>3.15. "PNP" vendor code used only to define a legacy device's CompatibleID</i>				
<i>Required for all system types</i>				
<i>3.16. Device driver and installation meet PC 99 requirements</i>				
<i>Required for all system types</i>				
<i>3.17. Minimal user interaction needed to install and configure devices</i>				
<i>Required for all system types</i>				

- 3.18. Connections use icons, plus keyed or shrouded connectors, with color coding
Required for all system types, with exceptions for mobile PCs
- 3.19. Hot-plugging capabilities for buses and devices meet PC 99 requirements
Required for all system types
- 3.20. System includes Device Bay 1.0-compatible bay
Recommended for all system types
- 3.21. Multifunction add-on devices meet PC 99 device requirements for each device
Required for all system types
- 3.22. All devices support correct 16-bit decoding for I/O port addresses
Required for all system types
- 3.23. All PC 99 input devices support Microsoft DirectInput and work simultaneously
Required for all system types
- 3.24. Each bus meets written specifications and PC 99 requirements
Required for all system types
- 3.25. System includes USB with two USB ports, minimum
Required for all system types, with exceptions for mobile PCs
- 3.26. System includes support for IEEE P1394.a
Recommended for all system types, with 3 ports recommended for Entertainment PCs
- 3.27. If present, PCI bus meets PCI 2.1 or later, plus PC 99 requirements
Required for all system types
- 3.28. System does not include ISA expansion devices or slots
Required for all system types
- 3.29. System includes keyboard connection and keyboard
Required for all system types
- 3.30. System includes pointing-device connection and pointing device
Required for all system types
- 3.31. System includes connection for external parallel devices
Required for all system types
- 3.32. System includes connection for external serial devices
Required for all system types
- 3.33. System includes IR devices compliant with IrDA specifications
Recommended for all system types
- 3.34. System includes PC 99-compatible CD or DVD drive and controller
Required Recommended Recommended Required DVD required
- 3.35. System includes audio support that meets PC 99 requirements
Recommended Recommended Recommended Recommended Required
- 3.36. System includes a modem or other public network communications support
Required Recommended Required Required Required
- 3.37. System includes a network adapter
Recommended Required Recommended Required Recommended
- 3.38. System includes smart card support
Recommended for all system types
- 3.39. Graphics adapter meets PC 99 minimum requirements
Required for all system types, with specific guidelines for each system type
- 3.40. Color monitor is DDC-compliant with unique EDID identifier
Required for all system types, with exceptions for mobile PCs
- 3.41. System meets PC 99 DVD-Video and MPEG-2 playback requirements, if system supports DVD-Video
Required for all system types, with exceptions for mobile PCs
- 3.42. Adapter supports television output if system does not include a large-screen monitor
Recommended for all system types
- 3.43. System supports PC 99 analog video input and capture capabilities
Recommended for all system types
- 3.44. System includes analog television tuner
Recommended for all system types

3.45. System BIOS and option ROMs support Int 13h Extensions Required for all system types				
3.46. Host controller for storage device meets PC 99 requirements Required for all system types				
3.47. Host controllers and devices support bus mastering Required for all system types				
3.48. Hard drive meets PC 99 requirements Required for all system types				
3.49. Operating system recognizes the boot drive in a multiple-drive system Required for all system types				
3.50. Floppy disk capabilities, if implemented, do not use legacy FDC Recommended for all system types				
3.51. System supports WHIIG				
Not applicable	Required	Required with Windows NT	Required	Not applicable
3.52. System includes driver support for WMI				
Not applicable	Required	Required with Windows NT	Required	Not applicable
3.53. Management information service provider enabled by default				
Not applicable	Required	Required with Windows NT	Required	Not applicable
3.54. Expansion devices can be remotely managed				
Not applicable	Required	Recommended	Required	Not applicable
3.55. SMBIOS 2.2 static table support is provided				
Not applicable	Required	Recommended	Required	Not applicable

Checklist for Workstation PC 99

- 4.1. Workstation meets all requirements for Office PC 99
Required
- 4.2. Workstation performance meets Workstation PC 99 minimum requirements
Required
- 4.3. Workstation supports multiple processors
Recommended
- 4.4. Workstation RAM can be expanded
Recommended
- 4.5. Workstation system memory includes ECC memory protection
Required
- 4.6. Workstation includes APIC support
Required
- 4.7. Workstation includes high-performance components
Recommended
- 4.8. Workstation supports 64-bit I/O bus architecture
Required for 64-bit platforms
- 4.9. Workstation does not include ISA expansion slots
Required
- 4.10. Graphics subsystem supports workstation performance demands
Required, with special conditions depending on PC 99 market category
- 4.11. Storage components rely on SCSI controller
Recommended
- 4.12. Workstation includes multiple hard drives
Recommended

Checklist for Entertainment PC 99

- 5.1. *System performance meets Entertainment PC 99 minimum requirements*
Required
- 5.2. *Entertainment PC includes three IEEE 1394 ports, with at least one easily accessible connector*
Recommended
- 5.3. *All Entertainment PC input devices meet USB HID specifications*
Recommended
- 5.4. *Entertainment PC includes a remote-control pointing device*
Recommended
- 5.5. *Entertainment PC audio subsystem meets PC 99 audio requirements*
Required
- 5.6. *Graphics subsystem meets Entertainment PC 99 requirements for 3-D acceleration*
Required
- 5.7. *Entertainment PC includes support for television output if the system doesn't have a large-screen monitor*
Recommended
- 5.8. *Entertainment PC includes large-screen DDC2B color entertainment monitor*
Recommended
- 5.9. *Entertainment PC DVD and TV playback meet PC 99 requirements*
Required
- 5.10. *Entertainment PC includes analog video input and capture capabilities*
Recommended
- 5.11. *Entertainment PC includes analog television tuner*
Recommended
- 5.12. *Entertainment PC includes digital broadcast satellite subsystem*
Recommended
- 5.13. *Entertainment PC includes DTV support*
Recommended

Checklist for Mobile PC 99

- 6.1. *Mobile PC performance meets Mobile PC 99 minimum requirements*
Required
- 6.2. *Mobile PC supports Smart Battery or ACPI Control Method battery*
Required
- 6.3. *Expansion capabilities of mobile PC are accessible to users*
Required
- 6.4. *Mobile PC connections use icons plus keyed or shrouded connectors*
Required
- 6.5. *Mobile PC includes one USB port*
Required
- 6.6. *USB-connected device does not maintain fully on power state*
Required
- 6.7. *Mobile PC includes an IEEE 1394 port*
Recommended
- 6.8. *Mobile PC includes CardBus*
Required
- 6.9. *Mobile PC keyboard and pointing device meet PC 99 requirements*
Required
- 6.10. *Mobile PC includes IR devices compliant with IrDA specifications*
Recommended

- 6.11. Mobile PC includes support for installing the operating system
Required
- 6.12. Mobile PC includes audio that meets Mobile PC 99 audio requirements
Recommended
- 6.13. Mobile PC includes communications device
Recommended
- 6.14. Mobile system supports hot-pluggable devices and alternative network connections
Recommended
- 6.15. Mobile system meets Mobile Power Guidelines '99
Recommended
- 6.16. Mobile system includes CD or DVD drive
Recommended
- 6.17. Mobile system meets Manageability Baseline requirements
Required if Windows NT is preinstalled
- 6.18. Built-in display adapter meets Mobile PC 99 minimum capability
Required
- 6.19. Built-in display adapter with 3-D hardware acceleration capabilities meets Mobile PC 99 minimum capability
Required
- 6.20. Mobile system meets Mobile PC 99 requirements for supporting multiple adapters and multiple monitors
Required
- 6.21. External graphics adapter interface supports DDC monitor detection
Required
- 6.22. Mobile system with MPEG-2 or DVD playback features meets Mobile PC 99 requirements for video playback
Required
- 6.23. Mobile system with AGP supports meets Mobile PC 99 requirements
Required
- 6.24. System meets Mobile PC 99 requirements if television output is implemented
Required
- 6.25. Built-in mobile display supports ICC color management
Required
- 6.26. System supports PCI docking through a bridge connector
Recommended
- 6.27. Docked mobile PC supports state change notification using ACPI
Required
- 6.28. Docked mobile PC has the ability to identify the specific model of the dock
Required
- 6.29. Docked mobile PC has the ability to uniquely identify the dock
Required
- 6.30. Mobile PC/docking station combination meets PC 99 requirements
Required
- 6.31. Docking station meets all PC 99 system requirements
Required
- 6.32. Mobile/docking station interface is supported using ACPI-defined mechanisms
Required
- 6.33. Mobile PC/docking station combination supports automatic resource assignment and dynamic disable capabilities
Required
- 6.34. Docking station supports warm docking
Required
- 6.35. Docking system supports fail-safe docking
Required

- 6.36. Docking station includes an IEEE 1394 port
Recommended
- 6.37. Docking station/mobile pair meets PC 99 audio requirements
Recommended
- 6.38. Mini-dock supports automatic resource assignment and dynamic disable capabilities for replacement devices
Required
- 6.39. Mini-dock supports warm docking
Required
- 6.40. Mini-dock supports fail-safe docking
Required
- 6.41. Mini-dock includes an IEEE 1394 port
Recommended
- 6.42. Mini-notebook performance meets PC 98 minimum requirements

Checklist for USB

Consumer	Office	Mobile	Workstation	Entertainment
7.1. System includes USB with two USB ports, minimum <i>Required for all system types, with exceptions for mobile PCs</i>				
7.2. Systems include BIOS support for USB keyboards and hubs <i>Required</i>				
7.3. All USB hardware complies with USB 1.0 specification <i>Required</i>				
7.4. Connections use USB icon <i>Required</i>				
7.5. Devices and drivers support maximum flexibility of hardware interface options <i>Required</i>				
7.6. USB host controller meets either OpenHCI or UHCI specification <i>Required</i>				
7.7. USB host controller can wake the system <i>Required</i>				
7.8. USB hubs comply with USB 1.1 specification <i>Recommended</i>				
7.9. Bus-powered USB hubs provide ports that can be individually power switched <i>Recommended</i>				
7.10. Systems and devices comply with USB power management requirements <i>Required</i>				
7.11. USB devices meet requirements in related USB device class specification <i>Required</i>				

Checklist for IEEE 1394

- 8.1. Controllers and devices support mandatory features in IEEE P1394.a with backward compatibility with IEEE 1394-1995
Required
- 8.2. Controllers comply with OpenHCI for IEEE 1394
Required
- 8.3. OpenHCI controllers and devices support advances defined in IEEE P1394.a
Required
- 8.4. Host supports peak data rate of 400 MB/sec, minimum
Required

- 8.5. Design avoids excessive currents resulting from ground-fault potential among devices
Recommended
- 8.6. Device command protocols conform to standard device class interfaces
Required
- 8.7. Devices support peak data rate of 400 MB/sec, minimum
Required
- 8.8. Devices requiring support for high-bandwidth data transfer use IEEE 1394
Recommended
- 8.9. Plug and Play devices demonstrate interoperability with other devices
Required
- 8.10. Topology faults do not cause the bus to fail
Required
- 8.11. Removable media devices support media status notification
Required
- 8.12. Devices that can initiate peer-to-peer communications also support remote programming
Required
- 8.13. Device provides a configuration ROM for unique device identification
Required
- 8.14. Device configuration ROM implements general ROM format
Required
- 8.15. Bus information block implemented at a base address offset of 0404h
Required
- 8.16. Configuration ROM provides globally unique device ID
Required
- 8.17. Root directory is located at a fixed address following the bus information block
Required
- 8.18. Configuration ROM includes a unit directory for each independent device function
Required
- 8.19. Each unit directory provides a valid Unit_Spec_Id and Unit_Sw_Version
Required
- 8.20. Each unit directory provides a pointer to a unit-dependent directory
Required
- 8.21. Vendor and model leaves support textual descriptor leaf format
Required
- 8.22. Unit-dependent directory provides a pointer to the unit's CSRs
Required
- 8.23. Device provides more than one connector port
Recommended
- 8.24. Device uses the approved IEEE 1394 connectors
Required
- 8.25. Self-powered devices propagate the power bus through each connector
Required
- 8.26. Only single-port leaf-node devices use 4-pin connectors
Required
- 8.27. Device connectors exhibit common speed and power characteristics
Required
- 8.28. Standard S400-rated IEEE 1394 cable is provided with devices
Required
- 8.29. Devices provide sufficient power to their PHY at all times
Required
- 8.30. Devices report power source and cable power consumption in Self_id packet
Required
- 8.31. Devices implement link power control
Required

8.32. Device requiring power increments in excess of Link_on implements unit-power CSRs
Required

8.33. Devices that source cable power must report this capability
Required

8.34. IEEE 1394-enabled PC sources cable power
Required

8.35. Power source supplies a minimum of 20 volts at 15 watts
Recommended

8.36. Devices notify the power manager of power change requests
Required

8.37. Devices and controllers comply with Cable Power Distribution specification
Required

8.38. Devices and controllers comply with IEEE 1394 power specification
Required

Checklist for PCI

9.1. All components comply with PCI 2.1
Required

9.2. System does not contain ghost devices
Required

9.3. System uses standard method to close BAR windows on nonsubtractive decode PCI bridges
Required

9.4. System provides 3.3V to all PCI connectors
Required

9.5. PCI add-on devices support both 5V and 3.3V signaling
Recommended

9.6. System-board bus complies with PCI 2.1
Required

9.7. Bus master privileges are supported for all connectors
Required

9.8. Functions in a multifunction PCI device do not share writable PCI Configuration Space bits
Required

9.9. All PCI devices complete memory write transaction (as a target) within specified times
Required

9.10. Devices use PCI 2.1 Configuration Space for Plug and Play device ID
Required

9.11. Device IDs include Subsystem IDs
Required

9.12. Configuration Space is correctly populated
Required

9.13. Interrupt routing is supported using ACPI
Required

9.14. BIOS does not configure I/O systems to share PCI interrupts
Recommended

9.15. BIOS configures boot device IRQ and writes to the interrupt line register
Required

9.16. Systems that support hot plugging for any PCI device use ACPI-based methods
Required

9.17. All PCI components comply with PCI Bus Power Management Interface specification
Required

9.18. System provide support for 3.3Vaux if a PCI bus is implemented
Required

9.19. Bus power states are correctly implemented
Required

9.20. PCI-based modem and network adapters support wake-up
Required

Checklist for ATA and ATAPI

10.1. Controller and peripherals comply with ATA/ATAPI-4 standards
Required

10.2. Bootable ATA controller supports EI Torito No Emulation mode
Required

10.3. Option ROMs support Int 13h Extensions
Required

10.4. Dual ATA adapters use single FIFO with asynchronous access or dual FIFOs and channels
Required

10.5. System BIOS and devices support LBA
Required

10.6. System BIOS supports ARMD
Recommended

10.7. Controller and peripherals support Ultra DMA
Required

10.8. Controller and peripheral connections include Pin 1 cable designation with keyed and shrouded connectors
Required

10.9. Peripherals comply with ATA/ATAPI-4
Required

10.10. Removable media devices support media status notification
Required

10.11. BIOS enumeration of all ATAPI devices complies with ATA/ATAPI-4
Required

10.12. ATAPI devices support DEVICE RESET command
Required

10.13. Each device has a Plug and Play device ID
Required

10.14. Dynamic resource configuration is supported for all devices
Required

10.15. Resource configuration meets bus requirements
Required

10.16. ISA address ranges 3F7h and 377h are not claimed by ATA controllers
Required

10.17. Bus and device meet PC 99 power management requirements
Required

10.18. ATA device supports ATA STANDBY command
Required

Checklist for SCSI

- 11.1. *SCSI host controller supports bus mastering*
Required
- 11.2. *Bootable SCSI controller supports EI Torito No Emulation mode*
Required
- 11.3. *Option ROM supports Int 13h Extensions*
Required
- 11.4. *Option ROM supports virtual DMA services*
Required
- 11.5. *Bus type is clearly indicated on connectors for all adapters, peripherals, cables, and terminators*
Required
- 11.6. *Differential devices support DIFFSENS as defined in SPI standard*
Required
- 11.7. *Automatic termination circuit and SCSI terminators meet SCSI-3 standard*
Required
- 11.8. *Terminator power is supplied to the SCSI bus with over-current protection*
Required
- 11.9. *External connector meets SCSI-2 or later standard*
Required
- 11.10. *Controller and peripherals implement SCSI bus parity signal*
Required
- 11.11. *SCSI connections use keyed and shrouded connectors*
Required
- 11.12. *External devices use automatic termination or an accessible on-board termination switch*
Required
- 11.13. *Shielded device connector meets SCSI-2 or later standard*
Required
- 11.14. *Removable media devices support media status notification*
Required
- 11.15. *Each device has a Plug and Play device ID*
Required
- 11.16. *Dynamic resource configuration is supported for all devices*
Required
- 11.17. *Resource configuration meets bus requirements*
Required
- 11.18. *SCAM support is disabled by default*
Required
- 11.19. *SCSI devices that support hot-plugging meet PC 99 requirements*
Required
- 11.20. *SCSI controllers provide multi-initiator support*
Recommended
- 11.21. *Bus and device meet PC 99 power management requirements*
Required
- 11.22. *Hardware supports the STOP/START UNIT command as defined in the SPI standard*
Required
- 11.23. *STOP/START UNIT command is used to decrease power consumption*
Required

Checklist for PC Card

- 12.1. All devices comply with the PC Card standards
Required
- 12.2. System and ZV-compatible 16-bit PC Cards comply with ZV standard definitions
Required
- 12.3. Controller supports industry-standard ExCA register set
Required
- 12.4. System maintains mapping of IRQ Routing Register bits to system interrupt vectors
Required
- 12.5. IRQ connections can be determined by using the 0805 register
Required
- 12.6. CardBus controllers support both ISA and PCI interrupts
Required
- 12.7. System supports industry-standard definition for CardBus bridges
Required
- 12.8. BIOS initializes CardBus controller in 82365-compatible mode and supports backward compatibility
Recommended
- 12.9. CardBus controllers do not share writable PCI Configuration Space bits
Required
- 12.10. Each 16-bit PC Card memory window in CardBus controller has its own page register
Required
- 12.11. Card supports required I/O card tuples
Required
- 12.12. Configuration table entry tuples listed in priority order
Required
- 12.13. Card specifies maximum configuration options
Required
- 12.14. Configuration Space meets Common Silicon Guidelines
Required
- 12.15. RESERVED fields comply with PCI 2.1
Required
- 12.16. CardBus card implements required and recommended tuples
Required
- 12.17. Socket controller complies with device class power management reference specification
Required
- 12.18. 16-bit PC Card cards implement power-related events using ReqAttn bit and #STSCHG mechanism
Required
- 12.19. CardBus controllers and cards implement PCI power management specifications
Required
- 12.20. No user intervention required for correctly installing devices
Required
- 12.21. Device is immediately functional without restarting the system
Required
- 12.22. ZV-compatible PC Card driver uses DirectDraw LVE
Required
- 12.23. 16-bit PC Card card driver supports sharing of level-mode interrupts
Required

Checklist for I/O Ports and Devices

Consumer	Office	Mobile	Workstation	Entertainment
13.1. System includes connection for external serial devices <i>Required for all system types</i>				
13.2. System includes connection for external parallel devices <i>Required for all system types</i>				
13.3. System includes external connection for keyboard <i>Required for all system types</i>				
13.4. System includes pointing-device connection and pointing device <i>Required for all system types</i>				
13.5. System includes USB game pad or joystick <i>Required for all system types; wireless recommended for Entertainment PC</i>				
13.6. System includes built-in wireless capabilities <i>Recommended for all system types</i>				
13.7. Devices use USB or external bus connections rather than legacy serial or parallel ports <i>Required Recommended Recommended Required Required</i>				
13.8. All devices meet PC 99 general device requirements <i>Required</i>				
13.9. Serial port meets device class specifications for its bus <i>Required</i>				
13.10. Legacy serial port is implemented as 16550A UART or equivalent and supports 115.2K baud <i>Required</i>				
13.11. Legacy serial port supports dynamic resource configuration <i>Required</i>				
13.12. Conflict resolution for legacy serial port ensures availability of at least one serial port <i>Required</i>				
13.13. Parallel port meets device class specifications for its bus <i>Required</i>				
13.14. Flexible resource configuration supported for each parallel port <i>Required</i>				
13.15. EPP support does not use restricted I/O addresses <i>Required</i>				
13.16. Compatibility, nibble mode, and ECP protocols meet IEEE 1284-1994 specifications <i>Required</i>				
13.17. Port connectors meet IEEE 1284-I specifications, minimum <i>Required</i>				
13.18. IEEE 1284 peripherals have Plug and Play device IDs <i>Required</i>				
13.19. Device identification string provides a Compatible ID key <i>Recommended</i>				
13.20. Daisy-chained parallel port device are Plug and Play capable <i>Required</i>				
13.21. Pointing-device connection meets requirements for its bus class <i>Required</i>				
13.22. Remote control pointing device provides PC 99 minimum support <i>Recommended</i>				
13.23. Keyboard connection meets requirements for its bus class <i>Required</i>				
13.24. No interference occurs between multiple keyboards <i>Required</i>				
13.25. Keyboard includes Windows and Application logo keys <i>Recommended</i>				

13.26. Device meets USB HID class specification requirements

Required

13.27. IR device uses NDIS 5.0 miniport driver

Required

13.28. IR device meets IrDA specifications

Required

13.29. IR device meets PC 99 bus and port specifications

Required

13.30. IR device supports dynamic resource configuration

Required

13.31. IR device meets USB guidelines for interfacing with IrDA Data and IrDA Control devices

Required

13.32. System supports standard input speeds of 4 Mb/s

Required

13.33. System provides a separate, physically-isolated transceiver for each IR protocol supported

Required

13.34. System supports RF capabilities

Optional

13.35. RF implementation uses a low-power RF alternative

Recommended

13.36. RF implementation provides a method to defeat noise and conflict with other RF devices

Recommended

13.37. System and RF device have separate local certification

Recommended

13.38. Smart card reader complies with ISO 7816

Required

13.39. Smart card reader supports ISO 7816 T=0 and T=1 protocols

Required

13.40. Smart card reader supports inverse-convention smart cards

Required

13.41. Smart card reader supports 258 byte packets in T=0 and 259 byte packets in T=1

Required

13.42. Smart card reader supports a smart card insertion/removal monitor

Required

13.43. Smart card reader supports PTS

Required

13.44. Smart card reader supports 3.5795 MHz minimum clock frequency

Required

13.45. Smart card reader supports 9600 bps minimum data rate

Required

13.46. Smart card reader supports the Power Down command

Required

13.47. Smart card reader does not use an additional power supply

Recommended

13.48. Each device has a unique Plug and Play device ID

Required

13.49. Dynamic resource configuration is supported for all devices

Required

13.50. Each device complies with its device class power management reference specification
Required

13.51. Device supports wake-up events
Required for wireless input; optional for other devices

13.52. Device drivers and installation meet PC 99 requirements
Required

13.53. All PC 99 input devices support Microsoft DirectInput and work simultaneously
Required

Checklist for Graphics Adapters

Consumer	Office	Mobile	Workstation	Entertainment
14.1. Graphics adapter uses PCI, AGP, or another high-speed bus Required for all system types				
14.2. System provides hardware-accelerated 3-D graphics Required	Recommended	Recommended	Required	Required
14.3. System uses WC with higher-performance processors Required for all system types				
14.4. Primary graphics adapter works normally with default VGA mode driver Required for all system types				
14.5. Adapter and driver support multiple adapters and multiple monitors Required	Required	Recommended	Required	Required
14.6. Adapter supports television output if system does not include large-screen monitor Recommended for all system types				
14.7. Adapter meets PC 99 general device requirements Required for all system types				
14.8. Screen resolution and local memory capacity meet PC 99 minimum requirements Required for all system types, with exceptions for mobile PCs				
14.9. Adapter meets VESA specifications for ergonomic timing rates Required for all system types, with exceptions for mobile PCs and flat panel desktop displays				
14.10. All supported color depths are enumerated Required for all system types				
14.11. Graphics operations use relocatable registers only Required for all system types				
14.12. Adapter supports downloadable RAMDAC entries for integrated color management Required for all system types				
14.13. Adapter supports DDC monitor detection Required for all system types, with exceptions for mobile PCs				
14.14. Hardware supports video overlay surface with scaling Required for systems that support TV or DVD video playback, with exceptions for mobile PCs				
14.15. Hardware supports VGA destination color keying for video rectangle Required for systems that support TV or DVD video playback				
14.16. Hardware supports alpha blending of graphics and video Required for systems that support TV or DVD video playback				
14.17. Video port meets PC 99 specifications if present on graphics adapter Required				
14.18. Hardware supports MPEG-2 motion compensation acceleration Recommended				
14.19. Hardware supports scanning at the same frequency as the incoming video Recommended	Recommended	Recommended	Recommended	Required
14.20. Extended resources can be dynamically relocated after system boot Required				

14.21. VGA resources can be disabled by software Required					
14.22. Frame buffer can be accessed directly by applications Required for all system types					
14.23. Adapter and driver support linear-mapped, low-resolution modes Required for all system types					
14.24. Hardware supports transparent blter Required for all system types					
14.25. Hardware provides support to prevent tearing Required for all system types					
14.26. Hardware supports programmable blter stride Required for all system types					
14.27. Hardware supports PC 99-required RGB rasterization Required for all system types, with exceptions for mobile PCs					
14.28. Hardware supports recommended RGB rasterization features Recommended for all system types, with exceptions for mobile PCs					
14.29. Hardware supports multi-texturing	Recommended	Recommended	Recommended	Required	Required
14.30. Hardware supports texture formats Required for all system types, with exceptions for mobile PCs					
14.31. Hardware complies with texture size limitations	Required	Recommended	Recommended	Required	Required
14.32. Hardware supports destination RGB alpha blending Recommended for all system types					
14.33. Hardware supports Z comparison modes and Direct3D-compatible formats Recommended Recommended Recommended Required Required					
14.34. Hardware meets PC 99 3-D accelerator performance requirements Recommended Recommended Recommended Required Required					
14.35. Adapter supports both NTSC and PAL output Recommended for all system types					
14.36. Default boot mode supports appropriate locale Required for all system types					
14.37. Adapter supports underscan scaling Required Recommended Recommended Recommended Required					
14.38. Adapter supports flicker filter Required for all system types, with exceptions for mobile PCs					
14.39. Adapter provides proper termination Required					
14.40. Adapter supports composite video and S-Video connectors Recommended Recommended Recommended Recommended Required					
14.41. Adapter with television output supports both VGA and television output Required for all system types					
14.42. Software supports positioning Required Recommended Recommended Recommended Required					
14.43. Software supports detection of television connection Required Recommended Recommended Recommended Required					
14.44. Analog video outputs, such as NTSC, have copy protection on DVD-enabled platforms Required for all system types					
14.45. Each device has a Plug and Play device ID Required					
14.46. System supports conflict resolution, VGA compatibility, and extended registers Required					
14.47. Chips support linear packed-pixel frame buffer, relocatable above 16 MB Required					

- 14.48. Option ROM supports DDC2B
Required
- 14.49. BIOS setup utility provides option to force use of system-board graphics
Recommended
- 14.50. BIOS supports large frame buffers for graphics adapters
Required
- 14.51. AGP meets PC 99 implementation guidelines
Required
- 14.52. PCI graphics device supports IRQ and correctly populates PCI BARs
Required Recommended Recommended Required Required
- 14.53. PCI system-board graphics device is not hidden from Plug and Play enumeration
Required for all system types
- 14.54. Graphics adapter complies with device class power management reference specification
Required
- 14.55. Graphics adapter complies with VBE/Core 2.0 extensions for power management
Required
- 14.56. Device drivers and installation meet PC 99 requirements
Required
- 14.57. Driver does not bypass any Microsoft-provided system components
Required
- 14.58. Applications provided with device meet requirements for Win32-based applications
Required
- 14.59. Driver supports dynamic color bit-depth change
Required

Checklist for Video and Broadcast Components

Consumer	Office	Mobile	Workstation	Entertainment
15.1. System meets PC 99 requirements for playback of MPEG-2 video from DVD-Video Required for all systems that support TV or DVD video playback				
15.2. System meets PC 99 requirements for playback of MPEG-2 video from digital TV broadcasts Recommended Recommended Recommended Recommended Required				
15.3. System supports PC 99 analog video input and capture capabilities Recommended for all system types				
15.4. System includes analog TV tuner Recommended for all system types				
15.5. System includes digital satellite receiver module Recommended for all system types				
15.6. System includes digital cable receiver module Recommended for all system types				
15.7. System includes ATSC DTV support Recommended for all system types				
15.8. System includes DVB cable, satellite, or terrestrial receiver module Recommended for all system types				
15.9. System includes support for multiple digital TV delivery methods Recommended for all system types				
15.10. System supports DV decoding and encoding Recommended for all system types				
15.11. MPEG sources such as DVD or a receiver module support bus mastering Required for all system types, with exceptions for mobile PCs				

- 15.12. Separate MPEG-2 hardware decoder for high-definition video does not cause PCI bus contention
Required
- 15.13. PCI-based sources of uncompressed standard-definition digital video support bus mastering with scatter/gather DMA
Required
- 15.14. All MPEG-2 decoders can accept an MPEG-2 elementary stream
Required
- 15.15. All MPEG transport stream information is available to the central host processor
Required
- 15.16. Background tasks do not interfere with MPEG-2 playback
Required Recommended Recommended Required Required
- 15.17. Video input, capture, and broadcast device support is based on DirectX foundation class and WDM Stream class
Required
- 15.18. All components meet PC 99 general device requirements
Required
- 15.19. MPEG-2 MP@ML playback meets PC 99 requirements
Required for all systems that support TV or DVD video playback, with exceptions for mobile PCs
- 15.20. MPEG-2 playback for ATSC, DVB, or other digital TV systems meets PC 99 requirements
Recommended Recommended Recommended Recommended Required
- 15.21. MPEG-2 video decode implementations meet PC 99 quality requirements
Required for all systems that support TV or DVD video playback, with exceptions for mobile PCs
- 15.22. De-interlacing of standard-definition video meets PC 99 requirements
Required for all systems that support TV or DVD video playback
- 15.23. MPEG-2 decoder supports the pull-down algorithm
Recommended
- 15.24. DVD decoder driver correctly handles media types, time discontinuity, and decode-rate adjustment
Required
- 15.25. DVD decoder supports subpicture compositing and closed captioning
Required for all system types, with exceptions for mobile PCs
- 15.26. Subpicture decoder correctly handles subpicture properties and other functions
Required for all system types, with exceptions for mobile PCs
- 15.27. System supports seamless DVD-Video 1.0 navigation
Required
- 15.28. All DVD video decoders must support Line21 closed-caption data
Required
- 15.29. System provides a licensed CSS copyright protection scheme
Required
- 15.30. Analog video decoder such as NTSC/PAL/SECAM meets PC 99 quality requirements
Required
- 15.31. Analog video capture device outputs video data at 3.7 MB/sec, minimum
Required
- 15.32. Video input or capture device provides raw sampled VBI data
Required
- 15.33. Digital video camera uses external bus support
Required
- 15.34. Video input image orientation identification meets PC 99 requirements
Required
- 15.35. Analog TV tuner/decoder supports PC 99 audio and video performance
Required
- 15.36. Analog TV tuner/decoder includes stereo audio decoder and supports SAP
Recommended for all system types

- 15.37. VBI capture oversamples VBI data at least four times
Required
- 15.38. VBI capture makes VBI data available to the CPU for processing
Required
- 15.39. Digital broadcast module can receive all streams contained in the particular transport stream
Required
- 15.40. Digital broadcast module can receive full bandwidth from each frequency
Required
- 15.41. Digital broadcast module can receive a minimum of 16 simultaneous elementary streams
Required
- 15.42. System can simultaneously receive two or more broadcast frequencies
Recommended
- 15.43. Digital broadcast module provides support for conditional access
Recommended
- 15.44. Digital broadcast module provides signal quality and other diagnostic information
Required
- 15.45. Digital broadcast receiver module supports general-purpose data cryptography
Recommended
- 15.46. Digital broadcast receiver module supports stream filtering
Recommended
- 15.47. ATSC DTV tuner/demodulator is fully implemented
Required
- 15.48. Stream splitting is supported using DirectShow filters
Recommended
- 15.49. Each hardware device has a Plug and Play device ID
Required
- 15.50. Dynamic resource configuration is supported for all devices
Required
- 15.51. Dependent video device is not independently enumerated
Required
- 15.52. Device drivers and installation meet PC 99 requirements
Required
- 15.53. Software drivers are installed during hardware driver installation
Required
- 15.54. Applications provided with device meet Win32 requirements
Required
- 15.55. NDIS 5.0 miniport driver provided for digital broadcast receiver
Required

Checklist for Monitors

- 16.1. Color monitor is DDC2B-compliant with unique EDID identifier
Required
- 16.2. Monitor supports Integrated Color Management
Required
- 16.3. Monitor meets all PC 99 general device and driver requirements
Required
- 16.4. CRT-based monitor supports a mechanism for control from host software
Recommended
- 16.5. Monitor meets minimum graphics resolution, based on monitor size
Required
- 16.6. CRT-based monitor supports ergonomic timing standards
Required

- 16.7. CRT-based monitor synchronizes to a new format in a timely fashion
Recommended
- 16.8. Large-screen monitor is 20 inches (viewable diagonal) or larger if included with an Entertainment PC system
Required
- 16.9. Entertainment CRT-based monitor supports 800 × 600 at 60 Hz refresh rate
Required
- 16.10. Entertainment monitor operates at the lower scan rates used by the operating system
Required
- 16.11. Entertainment monitor's host control has digitally controlled geometry
Recommended
- 16.12. External monitor meets DDC2B and EDID standards
Required
- 16.13. Monitor complies with device class power management reference specification
Required

Checklist for Audio Components

Consumer	Office	Mobile	Workstation	Entertainment
17.1. PC system includes PC 99 audio capabilities <i>Recommended</i>	<i>Recommended</i>	<i>Recommended</i>	<i>Recommended</i>	<i>Required</i>
17.2. Audio device does not connect to ISA bus <i>Required for all system types</i>				
17.3. Audio device does not use legacy hardware interfaces for MS-DOS-based applications <i>Required for all system types</i>				
17.4. Audio performance meets PC 99 requirements <i>Required, with exceptions for mobile PCs</i>				
17.5. Audio subsystem supports basic data formats in full duplex <i>Required</i>				
17.6. Audio subsystem supports full-duplex operation at independent sampling rates <i>Required</i>				
17.7. Analog microphone input meets PC 99 jack and circuit specifications <i>Required</i>				
17.8. Audio driver reports sample position for stream synchronization <i>Required</i>				
17.9. Audio connectors use icons with standard color coding <i>Required</i>				
17.10. Audio subsystem provides sufficient externally accessible inputs and outputs <i>Recommended</i>				
17.11. Microphone meets performance recommendations for PC 99 speech-recognition microphones <i>Recommended</i>				
17.12. Audio subsystem provides hardware or software support for DLS <i>Recommended</i>				
17.13. Audio subsystem supports AEC reference inputs <i>Recommended</i>				
17.14. Audio subsystem provides hardware filtering of 3-D localization filters <i>Optional</i>				
17.15. CD, DVD, and broadcast audio playback meet PC 99 requirements <i>Required with systems that support video playback</i>				
17.16. Audio subsystem provides consistent volume levels for different devices <i>Optional</i>				
17.17. Audio subsystem does not provide a DB-15 analog joystick/MIDI port <i>Recommended</i>				

- 17.18. Each hardware device has a unique Plug and Play device ID
Required
- 17.19. Dynamic resource configuration is supported for all devices
Required
- 17.20. PCI device conforms to PCI 2.1 and additional PC 99 requirements
Required
- 17.21. PCI device supports initiator, target, and block transfer
Required
- 17.22. PCI device supports non-DWORD-aligned audio buffers
Required
- 17.23. PCI device does not use ISA-based resources
Required
- 17.24. PCI device is digital ready
Required
- 17.25. Audio meets USB specification and USB audio device class specification
Required
- 17.26. USB audio device uses MMHID for control of basic functions
Required
- 17.27. Audio meets PC 99 requirements for IEEE 1394
Required
- 17.28. System and device comply with PCI bus power management specification
Required
- 17.29. Audio device complies with device class power management reference specification
Required
- 17.30. Device drivers and installation meet PC 99 requirements
Required
- 17.31. Audio meets PC 99 requirements for WDM driver support
Required
- 17.32. Applications provided with device meet Win32 requirements
Required

Checklist for Storage and Related Peripherals

- 18.1. Storage controller and devices support bus master capabilities
Required
- 18.2. Removable media devices support media status notification
Required
- 18.3. Device meets PC 99 general device requirements
Required
- 18.4. Device meets PC 99 requirements for ports or buses
Required
- 18.5. Device Bay storage device meets PC 99 requirements
Required
- 18.6. ATA controllers and devices support Ultra DMA
Required
- 18.7. USB-based mass storage device meets PC 99 requirements for USB
Required
- 18.8. System BIOS or option ROM supports El Torito No Emulation mode
Required
- 18.9. System BIOS or option ROM supports bootable ARMD
Recommended
- 18.10. Host controller for secondary storage uses IEEE 1394
Recommended

- 18.11. Floppy disk capabilities, if implemented, do not use legacy FDC
Recommended for all system types
- 18.12. Legacy FDC device meets resource configuration requirements, if present
Required
- 18.13. System supports dynamic configuration of legacy FDC
Required
- 18.14. Operating system recognizes the boot drive in a multiple-drive system
Required
- 18.15. Hard drive is SMART-compliant and uses SMART IOCTL API
Recommended
- 18.16. CD device provides 8x minimum transfer rate or better performance
Required
- 18.17. CD drive is CD-Enhanced compatible
Required
- 18.18. CD drive supports specified logical and physical CD formats
Required
- 18.19. ATA/ATAPI CD drive complies with the MMC-2 standard
Required
- 18.20. CD drive supports multisession and compatibility forms of the READ_TOC command
Required
- 18.21. ATA/ATAPI CD changer complies with the MMC-2 standard
Required
- 18.22. CD device supports digital audio detection
Required
- 18.23. CD device uses push-to-close design
Required
- 18.24. CD device uses push-to-close design
Recommended
- 18.25. Block rewritable optical ATAPI device complies with the MMC-2 standard
Required
- 18.26. DVD device provides 2x minimum transfer rate or better performance anywhere on the disc
Required
- 18.27. DVD drive and controller support bus master DMA transfers
Required
- 18.28. DVD drive meets minimum compatibility requirements
Required
- 18.29. DVD device complies with the MMC-2 standard
Required
- 18.30. DVD device uses push-to-close design
Recommended
- 18.31. DVD device supports defect management
Required
- 18.32. DVD device supports copyright protection
Required
- 18.33. Each device has a Plug and Play device ID
Required
- 18.34. Dynamic resource configuration is supported for all devices
Required
- 18.35. 3F7h and 377h are unclaimed by devices
Required
- 18.36. Physical security is provided for storage devices
Recommended
- 18.37. Option ROMs support Int 13h Extensions
Required

18.38. Device and controller comply with device class power management reference specification
Required

18.39. Device supports wake-up events
Optional

18.40. Device drivers and installation meet PC 99 requirements
Required

18.41. Device driver runs in protected mode following installation
Required

18.42. Applications provided with the device meet Win32 requirements
Required

18.43. Device driver for partitioned media supports all Windows and Windows NT partition types
Required

18.44. Device driver for block-mode device supports extended BPBs
Required

Checklist for Modems

Consumer	Office	Mobile	Workstation	Entertainment
19.1. Modem device is provided with PC system Required	Recommended	Required	Required	Required
19.2. Modem controller meets PC 99 requirements Required				
19.3. Modem supports V.250 AT command set Required				
19.4. Data modem supports V.90 (1998) analog modem modulation Required				
19.5. Data modem supports Annex A/V.34 (1998) SRC Required				
19.6. Data modem supports V.42 LAPM, V.42 bis, and V. 80 Synchronous Access data protocols Required				
19.7. Modem supports call control signaling, controlled using V.251 modem commands Required				
19.8. Fax modem supports 14.4 Kbps (V.17) with Class 1 (TIA-578-A) command set Required				
19.9. Modem supports delayed and blacklisted number clearing Recommended				
19.10. Modem supports TDD, meeting V.18-1996 with V.250 AT commands Recommended				
19.11. Voice modem supports ITU V.253 (AT+V) Required in modems supporting voice				
19.12. Voice modem support includes PC 99 recommendations Recommended				
19.13. Voice modem supports Caller ID Detection and Reporting Recommended				
19.14. Voice modem supports speakerphone Required in modems supporting voice				
19.15. Wireless support is implemented for modems Recommended				
19.16. Digital cellular phone support is implemented for modems Recommended				
19.17. ISDN driver supports unattended installation, with limitations Required				

- 19.18. ISDN modem supports required command set
Required
- 19.19. ISDN modem exposes both B channels
Recommended
- 19.20. ISDN modem supports asynchronous-to-synchronous conversion
Required
- 19.21. ISDN modem defaults to HDLC PPP after INF installation
Recommended
- 19.22. ISDN modem uses high-speed port
Recommended
- 19.23. Modem pair passes basic V.34 file transfer test
Required
- 19.24. Modem pair passes basic call connect reliability test
Required
- 19.25. Modem pair passes concurrency test
Required
- 19.26. Driver-based modem uses a WDM-based driver solution
Required
- 19.27. Driver-based modem processor usage is not excessive
Recommended
- 19.28. Driver does not disable interrupts for excessive periods of time
Recommended
- 19.29. Driver handles thread priorities appropriately
Recommended
- 19.30. Driver tolerates reasonable operating system and bus latencies.
Recommended
- 19.31. Driver does not make excessive use of locked memory
Recommended
- 19.32. Each hardware device has a unique Plug and Play device ID
Required
- 19.33. Each device has a Plug and Play compatible ID
Required
- 19.34. Dynamic resource configuration is supported for all devices
Required
- 19.35. PCI modem meets PC 99 requirements
Required
- 19.36. USB modem meets PC 99 specifications
Required
- 19.37. Device Bay modem meets PC 99 requirements
Required
- 19.38. Device complies with device class power management reference specification
Required
- 19.39. Device supports wake-up events
Required
- 19.40. Device drivers and installation meet PC 99 requirements
Required
- 19.41. Driver supports Unimodem
Required
- 19.42. Applications provided with device meet Win32 requirements
Required

Checklist for Network Communications

Consumer	Office	Mobile	Workstation	Entertainment
<i>20.1. PC system includes network adapter</i>				
<i>Recommended</i>	<i>Required</i>	<i>Recommended</i>	<i>Required</i>	<i>Recommended</i>
<i>20.2. PC system includes internal or external ISDN device</i>				
<i>Recommended*</i>	<i>Recommended</i>	<i>Recommended</i>	<i>Recommended</i>	<i>Recommended*</i>
<i>20.3. PC system includes cable modem</i>				
<i>Recommended*</i>	<i>Recommended</i>	<i>Recommended</i>	<i>Recommended</i>	<i>Recommended*</i>
<i>20.4. PC system includes ATM adapter</i>				
<i>Optional</i>	<i>Optional</i>	<i>Optional</i>	<i>Optional</i>	<i>Optional</i>
<i>20.5. PC system includes ADSL adapter</i>				
<i>Recommended*</i>	<i>Recommended</i>	<i>Recommended</i>	<i>Recommended</i>	<i>Recommended*</i>
<i>20.6. PC system includes satellite or broadcast receiver with NDIS driver</i>				
<i>Recommended*</i>	<i>Recommended</i>	<i>Recommended</i>	<i>Recommended</i>	<i>Recommended*</i>
<i>20.7. Adapter uses NDIS 5.0 miniport driver</i>				
<i>Required</i>				
<i>20.8. Intermediate NDIS 5.0 miniport driver is deserialized</i>				
<i>Recommended</i>				
<i>20.9. Full-duplex adapter automatically detects and switches to full duplex mode</i>				
<i>Required</i>				
<i>20.10. Adapter automatically senses presence of functional network connection</i>				
<i>Required</i>				
<i>20.11. Adapter automatically senses transceiver type</i>				
<i>Required</i>				
<i>20.12. Adapter supports quadword or smaller buffer alignment for receive and byte buffer alignment for send</i>				
<i>Required</i>				
<i>20.13. Adapter communicates with driver across any bridge</i>				
<i>Required</i>				
<i>20.14. Adapter supports filtering for at least 32 multicast addresses</i>				
<i>Required</i>				
<i>20.15. Adapter and driver support promiscuous mode</i>				
<i>Required</i>				
<i>20.16. Adapter is compatible with remote new system setup capabilities if used as a boot device</i>				
<i>Required</i>				
<i>20.17. PCI network adapters are bus masters</i>				
<i>Required</i>				
<i>20.18. Device Bay-type network adapter meets PC 99 requirements</i>				
<i>Required</i>				
<i>20.19. USB or IEEE 1394 device meets specifications for network communications devices</i>				
<i>Recommended</i>				
<i>20.20. Network adapter and driver supports priority for IEEE 802-style networks</i>				
<i>Recommended</i>				
<i>20.21. Internal ISDN device meets PC 99 network adapter requirements</i>				
<i>Required</i>				
<i>20.22. Internal ISDN device supports synchronous HDLC framing</i>				
<i>Required</i>				
<i>20.23. NDIS interface and driver support raw unframed synchronous B channel I/O</i>				
<i>Required</i>				
<i>20.24. NDIS driver supports unattended installation, with limitations</i>				
<i>Required</i>				
<i>20.25. ISDN device with U-interface includes built-in NT-1 capability</i>				
<i>Recommended</i>				

- 20.26. ISDN device includes software-selectable terminating resistors
Required
- 20.27. Device is implemented as an integrated cable modem
Recommended
- 20.28. Integrated cable modem meets PC 99 network adapter requirements
Required
- 20.29. Integrated cable modem exposes an ATM or Ethernet interface
Required
- 20.30. ATM adapter meets PC 99 network adapter requirements
Required
- 20.31. ATM adapter supports a minimum number of simultaneous connections
Required
- 20.32. ATM adapter supports all service types defined by the ATM Forum
Recommended
- 20.33. ATM adapter supports UBR service type
Required
- 20.34. ATM adapter supports a minimum number of simultaneously active VBR or CBR connections
Required
- 20.35. ATM adapter supports traffic shaping
Required
- 20.36. ATM adapter enforces PCR on UBR virtual circuits
Required
- 20.37. ATM adapter and driver support dynamic link speed configuration
Required
- 20.38. ATM adapter supports OAM
Recommended
- 20.39. ATM adapter supports buffer chaining (Tx + Rx)
Recommended
- 20.40. ADSL device is implemented as an integrated ADSL modem
Recommended
- 20.41. Integrated ADSL modem meets PC 99 network adapter requirements
Required
- 20.42. ATM/ADSL solution is implemented for integrated ADSL modems
Recommended
- 20.43. ADSL modem supports DMT line encoding
Recommended
- 20.44. ADSL modem supports rate adaptation
Recommended
- 20.45. Infrared device meets PC 99 network adapter requirements
Required
- 20.46. Infrared device supports both FIR and SIR
Required
- 20.47. IrDA hardware supports unattended driver installation
Required
- 20.48. Home networking adapter meets PC 99 network adapter requirements
Required
- 20.49. Home networking uses appropriate media
Recommended
- 20.50. Home networking media supports IP
Required
- 20.51. Each device has a unique Plug and Play device ID
Required
- 20.52. Dynamic resource configuration is supported for all devices
Required

- 20.53. Plug and Play capabilities support multiple adapters*
Required
- 20.54. All resource settings are reported in the user interface*
Required
- 20.55. Device complies with device class power management reference specification*
Required
- 20.56. Device supports wake-up events*
Required
- 20.57. Device drivers and installation meet PC 99 requirements*
Required
- 20.58. Driver works correctly with Microsoft network clients and protocols*
Required
- 20.59. NDIS miniport driver makes only NDIS library calls or WDM system calls*
Required
- 20.60. NDIS 5.0 driver uses new INF format*
Required

Checklist for Printers

- 21.1. IEEE 1394 printer meets PC 99 requirements for IEEE 1394*
Required
- 21.2. USB printer meets PC 99 requirements for USB devices*
Required
- 21.3. IEEE 1284 printer supports compatibility mode, nibble mode, and ECP, compliant with IEEE 1284-I*
Required
- 21.4. IEEE 1284 printer meets IEEE 1284-II requirements*
Recommended
- 21.5. ECP printer works correctly when ECP mode is turned off*
Required
- 21.6. IEEE 1284 hardware supports error notification*
Required
- 21.7. Daisy-chained parallel port device must be Plug and Play capable*
Required
- 21.8. Implement Plug and Play support for all supported buses*
Required
- 21.9. Peripheral device meets IEEE 1284 requirements*
Required
- 21.10. Printer INF file and installation meet PC 99 requirements*
Required
- 21.11. Driver correctly reports device capabilities*
Required
- 21.12. Driver supports error notification*
Required
- 21.13. Driver supports ICC color management*
Required
- 21.14. Port monitor software meets DDK guidelines*
Required

21.15. Driver supports point-and-print network installation
Required

21.16. Device available immediately following installation
Required

21.17. Device supports accurate printable regions
Required

21.18. Driver supports required DDIs
Required

21.19. Driver based on unidriver
Recommended

Checklist for Digital Still Image Devices

If a recommended feature is implemented, it must meet the PC 99 requirements for that feature as defined in this document.

22.1. Device uses PC 99 compatible port connection with USB or IEEE 1394 connection
Required

22.2. Icons provided for port and peripheral connectors
Required

22.3. Device supports ICC color management
Required

22.4. IR device meets PC 99 IR requirements
Required

22.5. Digital still image device with an IR interface uses Fast IR
Required

22.6. Digital still image device with an IR interface provides a secondary PC interface
Required

22.7. SCSI device meets PC 99 SCSI requirements
Required

22.8. SCSI device attaches to any PC 99-compliant SCSI controller
Required

22.9. USB device meets PC 99 USB requirements
Required

22.10. USB device supports string descriptors
Required

22.11. USB imaging device has a zero-bandwidth alternate interface
Recommended

22.12. USB device does not saturate the USB bus
Recommended

22.13. USB device follows PC 99 USB performance recommendations
Required

22.14. Digital camera uses PC-compatible file system for removable storage
Required

22.15. Digital camera stores images in common file formats such as JPEG or FlashPix
Recommended

22.16. IEEE 1394 device meets PC 99 requirements for IEEE 1394
Required

22.17. Serial device complies with Plug and Play External COM Device Specification v. 1.0
Required

22.18. Plug and Play capabilities implemented for all supported buses
Required

22.19. Each device has a Plug and Play device ID
Required

22.20. Daisy-chained parallel port imaging devices must be Plug and Play capable.
Required

22.21. Device supports power management requirements for its bus
Required

22.22. Device drivers and installation meet PC 99 requirements
Required

22.23. Driver support is implemented under the Still Image architecture
Required

22.24. Applications provided with the device meet Win32 specifications
Required

22.25. Device driver supports TWAIN 1.7 or later
Required

22.26. Digital still image devices with an IR interface use the Windows Sockets interface
Required

22.27. Asynchronous imaging device with an IEEE 1394 interface uses SBP2Port
Recommended